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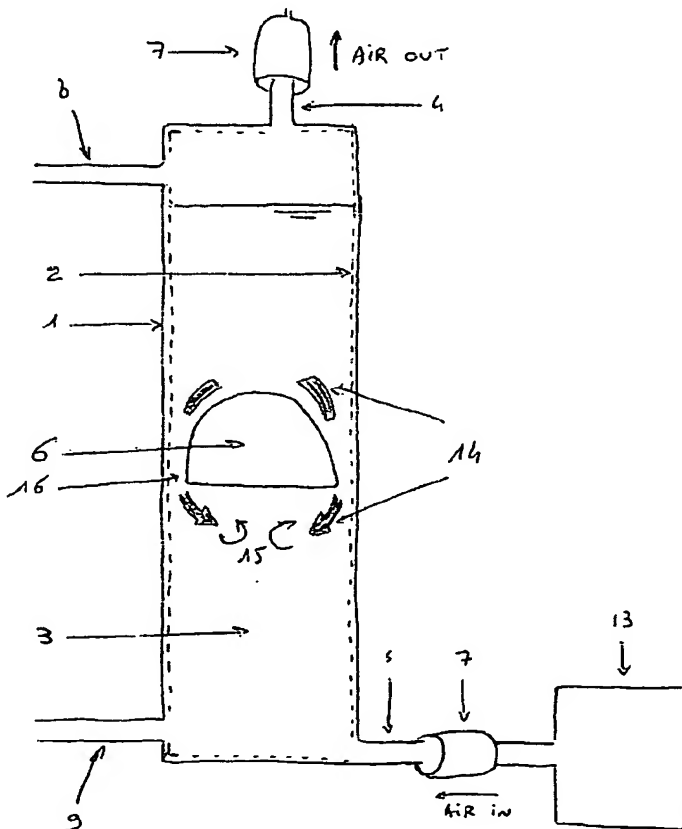
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(54) Title: CELL CULTURE SYSTEM



(57) Abstract: The present invention provides a novel apparatus to grow cells where the cultivation chamber (1) is partially filled with liquid cultivation medium and cells. Mixing and aeration is achieved by generating intermittently one single large gas bubble (6) at the bottom of the column bioreactor, the single large bubble width representing from 50 to 99 % of the tank width, preferably from 60 to 99 %, more preferably 98,5 %. The culture medium flows out as a film between the large bubble and the inner wall of the bioreactor. This rising bubble allows mixing and aeration of the bulk. As the design of the invention is very simple, it is possible to manufacture it with flexible plastic material and use the apparatus as a disposable system. Moreover, such a mixing/aeration principle minimizes cell damages usually due to shear stress and small bubbles and allows easy and efficient scale-up from small scale to a larger one. Such a large-scale, efficient and disposable culture system can largely reduce production costs.

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